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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,677	02/01/2006	Armando Annunziato	09952.0023	9211

22852 7590 07/27/2009
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EXAMINER

VU, MICHAEL T

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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07/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,677	Applicant(s) ANNUNZIATO ET AL.	
	Examiner MICHAEL T. VU	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 22-42 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 22-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanley (US 6,836,467) in view of Yea et al (US 6,829,491).**

Regarding claim 22, Stanley teaches a method of planning cellular communication networks (Abstract, Modeling costs of wireless network infrastructure), implemented using a computer (Col. 2, line 47 to C3, line 41), comprising the step of defining at least one cost function to be optimized (Cost Optimal, Col. 2, line 47-67), said at least one cost function being indicative of the quality of service of at least one class of services rendered by the network (Abstract, cost function), and (Col. 5, lines 49-62, Col. 17, lines 14-34),

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But Stanley does not explicitly teach comprising the step of selecting, by the computer, said at least one class of services as location-based services rendered by said network.

However, Yea teaches comprising the step of selecting (Col. 7, lines 22-67), by the computer (Col. 8, lines 12-41), said at least one class of services as location-based services rendered by said network (Col. 2, line 48 to Col. 3 line 50, Col. 6, lines 9-33), and (see Signal Quality, Col. 7, line 55 to Col. 8, line 41).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stanley, with Yea's teaching, in order to maximizing the quality of service such as lost call rates, traffic usage, loading, call quality measures, location measurement and/or locating the mobile terminals in different locations, positions, and in different areas for saving cost.

Regarding claim 23, Stanley and Yea teach the method of claim 22, wherein said cost function indicative of the quality of service of location-based services is based on measuring a dilution of precision of said network (see Signal Quality, Col. 7, line 55 to Col. 8, line 41), and (Col. 8, lines 12-41) all of Yea.

Regarding claim 24, Stanley and Yea teach the method of claim 22, comprising the steps of: defining a joint cost function jointly indicative of the quality of service of location-based services (Col. 5, lines 49-62), and (Col. 17, lines 14-34) and at least an additional class of services rendered by said network (Col. 8, lines 12-41), said additional class of services being selected from the group of voice services and data services (Col. 2, line 48 to Col. 3 line 50, Col. 6, lines 9-33); and optimizing said joint

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cost function (see Signal Quality, Col. 7, line 55 to Col. 8, line 41), and (Col. 8, lines 12-41) all of Stanley.

Regarding claim 25, Stanley and Yea teach the method of claim 22, comprising the steps of: providing a system for measuring at least one actual network parameter (Col. 3, lines 17-50); and comparing the measurements provided by said measurement system with the corresponding parameters as planned (Col. 2 line 48 to Col. 3, line 51) all of Yea.

Regarding claim 26, Stanley and Yea teach the method of claim 22, comprising the step of locating at least one critical point in the network where inadequate quality of service is being provided (Col. 12, line 27-65) of Stanley.

Regarding claim 27, the combination of Stanley and Yea teach the method of claim 26, comprising the step of generating information items indicative of counter measures to be carried out in said network in order to dispense with at least one critical point (Col. 12, line 27-65) of Stanley.

Regarding claim 28, Stanley and Yea teach the method of claim 22, wherein said at least one cost function is optimized by using as input data the location of at least one radiating system associated with one base station in said cellular communication network (Col. 2, line 48 to Col. 3 line 50) of Yea.

Regarding claim 29, the combination of Stanley and Yea teach the method of claim 28, for planning a cellular communication network over a given area (Abstract), comprising the steps of: subdividing said area into sub-areas (Col. 2, line 47 to col. 3, line 42), one of said sub-areas corresponding to the destination sub-area of a new base

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station in said network (Col. 4, lines 17-57), the remaining sub-areas being expected to be affected by the introduction of said new base station (Col. 16 lines 19-67); planning said destination sub-area of the new base station also by evaluating the effects on said remaining sub-areas (Col. 2, line 48 to Col. 3 line 47); and evaluating the quality of service resulting from said planning while ascertaining whether such a level of quality of service is satisfactory (Col. 2, line 48 to Col. 3 line 40), and (Col. 6, line 49 to Col. 7, line 29) all of Stanley.

Regarding claim 30, the combination of Stanley and Yea teach the method of claim 29, wherein said planning involves computing a point-by-point value of the dilution of precision for all the pixels in the area subject to planning (Col. 2, line 48 to Col. 3 line 50, Col. 6, lines 9-33) of Yea.

Regarding claim 31, the combination of Stanley and Yea teach the method of claim 30, wherein said planning involves computing a cost function pertaining to location services only (Col. 2, line 48 to Col. 3 line 51), said cost function being a linear combination of said dilution of precision and the average and minimum values thereof (Col. 17, lines 14-34), and (Col. 12, lines 26-65) all of Stanley.

Regarding claim 32, the combination of Stanley and Yea teach the method of claim 29, comprising the step of optimizing a joint cost function for voice, data and location services (Abstract0, and (Col. 2, line 48 to Col. 3 line 40, Col. 17, lines 14-34) all of Stanley.

Regarding claim 33, the combination of Stanley and Yea teach the method of claim 29, wherein, if said quality of service is found not to be satisfactory (Col. 11, lines

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3-51), comprising the step of re-planning the position of at least one radiating system associated with one base station in said cellular network (Col. 17, lines 14-34), and (Col. 12, lines 26-65) all of Stanley.

Regarding claim 34, the combination of Stanley and Yea teach the method of claim 33, wherein said at least one radiating system whose position is re-planned associated with one base station is a radiating system associated with said new base station (Col. 17, lines 14-34), and (Col. 12, lines 26-65) all of Stanley.

Regarding claim 35, the combination of Stanley and Yea teach the method of claim 25, comprising the steps of: providing a set of network design parameters (Col. 1, line 20-63); obtaining from said measurement system a set of measurements corresponding to said set of design parameters (Col. 7, lines 18-53); and locating at least one critical area wherein the quality of service of said location services fails to reach an expected quality of service level as a result of said set of measurements failing to comply with said set of network design parameters (see Signal Strength/Accuracy network design, Col. 8, lines 44-67), and (Col. 9, 36 to Col. 10, lines 21) all of Stanley.

Regarding claim 36, the combination of Stanley and Yea teach the method of claim 35, comprising the steps of: selecting a service scenario (Col. 2, 46 to Col. 3, line 41); and selecting at least one location system as the one most affected by the variations in the network parameters being analyzed (Col. 4, lines 17-58) all of Stanley.

Regarding claim 37, the combination of Stanley and Yea teach the method of claim 35, comprising the step of providing a list of points in the network characterized by

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their quality of service (Col. 17, lines 14-34), and see accuracy/signal strength (Col. 12, lines 26-65) all of Stanley.

Regarding claim 38, the combination of Stanley and Yea teach the method of claim 35, comprising the steps of generating (Col. 2, lines 24-65) and displaying a map of critical points in the area under analysis (See Figure #2A, Network Modeling Tool #270, displaying on a monitor, Col. 3, lines 16-50), and (Col. 7, line 55 to Col. 8, line 67) all of Yea.

Regarding claim 39, Stanley and Yea teach the method of claim 22, comprising the step of providing a remote deployment module arranged for operating on a sub-set of the network subject to planning (See Figure #2A, Network Modeling Tool with #270, Col. 3, lines 16-50), and (Col. 7, line 55 to Col. 8, line 67) all of Yea.

Regarding claim 40, the combination of Stanley and Yea teach the method of claim 39, comprising the steps of configuring said remote deployment module for collecting local network data (Col. 3, lines 16-60), pre-validating such measurements and either comparing said measurements with corresponding planning data of a network design sub-set or sending such measurements to a remote module for further processing (Col. 3, lines 16-50), and (Col. 7, line 55 to Col. 8, line 67) all of Yea.

Regarding claim 41, Stanley and Yea teach A cellular communication network comprising at least one processing module for implementing the planning method of any one of claims 22 to 40, (Col. 3, lines 16-50), and (Col. 7, line 55 to Col. 8, line 67) all of Yea.

Regarding claim 42, Stanley and Yea teach a computer readable medium encoded with a computer program product loaded into a memory of a computer and including software code portions for performing the steps of the method of any one of claims 22 to 40, (Col. 6, lines 17-47), and (Col. 8, lines 19-67) all of Yea.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MICHAEL T. VU** whose telephone number is (571)272-8131. The examiner can normally be reached on 8:00am - 6:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles N. Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

//MICHAEL T VU/
Examiner, Art Unit 2617

/Charles N. Appiah/
Supervisory Patent Examiner, Art Unit 2617